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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/706,382 11/06/00 LIN

J

EXAMINER

QM12/0412

J T LIN
4532 OLD CARRIAGE TRAIL
OVIEDO FL 32765

BIRD, D

ART UNIT

PAPER NUMBER

3739

DATE MAILED:

04/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/706,382

Applicant(s)

LIN, J. T.

Examiner

David Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant cites "a system" for presbyopic correction, but then recites claim 1 matter in method steps using claim language of "selecting," "controlling," etc., followed by most of the appending claims as specifically reciting apparatus characteristics. However, with a clear preponderance of claims reciting apparatuses, and with applicant's preamble directed to a "system," claims 1-22 will be examined as apparatus claims.

Further, claim 4 is recited as appending to claim 2, whereas it is apparent to the examiner that claim 4 was meant to append to claim 3, and will be addressed thusly. Correction is required.

Also, claims 16, 21, and 22 are vague and indefinite, as they are method steps failing to further structurally limit the claims. Furthermore, claim 21 was mistyped by applicant as claim 12. Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 3, 18, 20, are rejected under 35 U.S.C. 102(e) as being anticipated by O'Donnell, Jr. (6,197,018 B1 hereafter cited as O'Donnell).

As to claims 1, 18, 20, O'Donnell discloses a laser beam with a predetermined wavelength (C3/8-12), means to control a beam spot size to be between 100 to 500 microns in diameter (.1 mm to .5 mm dia) (C2/12-14), means to place a plurality of treatment spots in concentric circles of 7mm to 13 mm in diameter (C2/18-22). As to applicant's claim element of "8 circular spots," the examiner's position is that an exact number of treatment spots is a design choice, and no unexpected results or criticality is dependent upon the exact number of spots. Furthermore, O'Donnell discloses 6 to 15 spots arranged concentrically Figs 2A-2C.

As to claim 3, O'Donnell discloses an infrared laser beam having a frequency of 800 to 1900 nm (.8 to 1.9 microns) (C2/5-8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 17, 19, 21, 22, are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of Mathis et al.(5,599,341 hereafter cited as Mathis).

As to claims 16, 17, 19, O'Donnell discloses laser treatment of the corneal tissue with spot patterns, but does not disclose linear patterns. Mathis discloses laser generated radial linear patterns on corneal tissue Figs 10D, 10E (C10/17-23).

As to claims 21, 22, O'Donnell's spot generation does not explicitly disclose removing sclera tissue. Mathis teaches sclera tissue removal (C8/50-52) during his laser treatment.

It would have been obvious at the time of applicant's invention for one of ordinary skill in the art to provide the teachings of Mathis to O'Donnell's concentric spot teachings and sclera tissue removal in order to effect different geometrical results of the eye's curvature.

Claims 4, 5, 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of Rozoiu et al. (5,741,247 hereafter cited as Rozoiu). O'Donnell discloses an infrared laser, but does not explicitly disclose other laser energies. Rozoiu discloses an Er:YAG (about 2.9 microns wavelength), an Arf excimer laser of 193 nm, an XeCl excimer laser of 308 nm. (See text C7/5-30). It would have been obvious at the time of applicant's invention for one of ordinary skill in the art to provide Rozoiu's laser energy frequencies to O'Donnell in order to optimize a laser frequency to a specific tissue.

Claims 2, 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of Neev (6,156,030). O'Donnell's laser system does not explicitly disclose an ultraviolet laser 150-360 nm wavelength or a 950-2100 nm solid state diode laser, or a treatment time of less than 200 nanoseconds. Neev teaches for medical surgery a 15 nanosecond treatment pulse using a 193 nm ultraviolet laser (C15/10-14), a solid state diode laser (C49/10-13) with solid state radiation of 200-2500nm (C4/26). It would have been obvious at the time of applicant's invention for one of ordinary skill in the art to provide Neev's pulse times and laser frequencies to O'Donnell in order to optimize energy applications for specific tissues.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of Hammer et al. (5,738,676 hereafter cited as Hammer) O'Donnell does not disclose using a spherical lens to control his laser energy. Hammer discloses a spherical lens (C5/2-5, Fig 1, #10) for his eye laser device. It would have been obvious at the time for one of ordinary skill in the art to provide Hammer's lens to O'Donnell's laser to better control the spot size of laser treatment.

Claims 9, 10, 11, 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of Mathis and in further view of Rizoiu. O'Donnell's presbyopic treatment does not explicitly disclose a hand held laser tool, or a laser core diameter, or the transparent quality of his laser fiber, or having a flat end on his laser tip, or the length of his laser fiber. Rizoiu discloses a handle holding his laser fiber (Figs 1, 2) whereas Mathis discloses a lengthy fiber (Fig 3) with a squared off tip (Figs 3, 8), and Mathis discloses optic fiber diameters of .01 to 2 mm (C6/28-31), thus addressing

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claims 9 and 11. Further, it is the position of the examiner that the length of an optic fiber for laser eye treatment is one of design choice and no unexpected results or criticality depends on the delivery fiber length, thus also addressing claim 9. Furthermore, optic fibers for surgical devices are commonly selected for their transparency as this transparency is a necessary quality for surgical use to avoid heating the fiber, thus addressing claim 10. Claim 12 reciting a laser beam spot size of .5mm was addressed in claim rejection 1 above. It would have been obvious at the time of applicant's invention for one of ordinary skill in the art to provide Rizioiu and Mathis' teachings to O'Donnell's system in order to better manually handle the laser energy delivery device.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnell in view of (i) Rizioiu and Mathis, and in further view of Tsushima et al. (5,845,024 hereafter cited as Tsushima). O'Donnell i) Rizioiu and Mathis do not explicitly disclose a laser delivery with an optic fiber cylindrically shaped tip capable of irradiating a straight line. Tsushima discloses an optic fiber with a cylindrical tip to irradiate with laser light in a straight line (Figs 4-5; C3/18-60). As to the exact dimensions of an irradiated straight line it is the position of the examiner that this is a design choice with no unexpected results or criticality dependent upon such dimensions. It would have been obvious at the time of applicant's invention for one of ordinary skill in the art to have provided the Tsushima's cylindrical lens tip O'Donnell in order to effect a straighter line than with individual spots.

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Claims 14, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rizioiu and Mathis as applied to claim 9 above, and further in view of Sawusch (6,171,336 B1). As to operating the fiber tip in a contact mode or non-contact mode, it is the position of the examiner that choosing either mode would be examined as a method claim as earlier in related #112, 2nd paragraph rejections above. As to a depth of laser ablation, O'Donnell in view of Rizioiu and Mathis does not disclose any preference for a depth of a surgical cut. Sawusch discloses cutting radial incisions on corneal tissue to a depth of 400-500 microns or about "one-half peripheral corneal thickness" (C5/42-46) with a surgical blade. It would have obvious at the time of applicant's invention for one of ordinary skill in the art to provide Sawusch's cut depth to O'Donnell's system in order to avoid cutting too deeply.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Balgorod (5,102,409) discloses method for modification of corneal refractive properties using a ring-like deflector. Peyman (6,203,538 B1) discloses laser means to modify the cornea.

Any inquiry concerning the communication from the examiner should be directed to David Burd whose telephone number is (703) 305-0910. The examiner can normally be reached Monday – Friday from 9 am to 4pm.

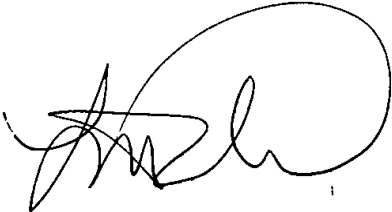
If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Ms. Linda Dvorak, can be reached on (703) 308-0994. The Fax number for this Group is (703) 305-3590.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0858.

Dmb
March 27, 2001



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SUPERVISORY PATENT EXAMINER
GROUP 3700